24(2), 5(3)

AUTHORS:     Frisman, E. V., Boytsova, N. N.

TITLE:       Optical Anisotropy of Copolymeric Molecules (Opticheskaya anizotropiya molekul sopolimera)

ABSTRACT:    In the present paper the authors investigated the optical anisotropy of the copolymeric molecules styrene and methyl methacrylate with various concentrations of their components. For each sample the solvent was chosen in such a way that the difference of polarizability $(\alpha_1 \alpha_2)$ of a statistical segment can be determined by the formula

$$\frac{[n]}{[\eta]} = \frac{4\pi}{45}\,\frac{(n_s^2+2)^2}{n_s}\cdot\frac{1}{kT}\,(\alpha_1\,\alpha_2) \quad (1)$$

The necessary condition $n_k \approx n_s$ was checked by a refractometric measurement of the increment. The measurement was carried out by R. K. Chander. In formula (1) $[n]$ = dynamo optical constant, $[\eta]$ = characteristic viscosity, $n_s$ = refractive index of the solvent

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and $n_k$ = refractive index of the polymer $(n_k \approx n_s)$. The equation

$$[n] = \left(\frac{\Delta n}{g c \eta_0}\right)_{\substack{g \to 0 \\ c \to 0}}$$

holds for this case, where $\Delta n$ denotes

the quantity of double refraction in a solution of concentration $c$ with a velocity gradient $g$, and $\eta_0$ the viscosity of the solvent. The authors measured the dependence $\Delta n$ on $g$ for solutions with various concentrations. This dependence was found to be linear within the investigated range of velocity gradients and concentrations. The values $(\alpha_1 - \alpha_2)$ for the copolymers are listed in a table. If the anisotropy of polarizability of a copolymer segment is assumed to be the sum of the anisotropies of polarizability of the components, it may be stated that the difference of polarizability of the copolymer and methyl methacrylate is a sum of the difference of polarizability of the individual components. The author thanks Professor V. N. Tsvetkov for discussion of the

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        aforementioned problems. There are 5 figures, 1 table, and
        7 references, 4 of which are Soviet.

SUBMITTED:    May 15, 1958

Card 3/3

FRISMAN, E.V.; SIBILEVA, M.A.; KRASNOPEROVA,A.V.

Hydrodynamic and optical properties of polymer solutions in the
range of high concentrations. Vysokom.soed. 1  no.4:597-606
Ap '59.                                        (MIRA 12:9)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
                    (Polymers)

FRISMAN, E.V.; ARKHIPOVA, E.N.

Determining the optical anisotropy of macromolecules in a system
as it is affected by shape. Part 1. Zhur.tekh.fiz. 29 no.2:
198-206 F '59.                                    (MIRA 12:4)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
                (Styrene--Optical properties)

FRISMAN, E.V.; GARMONOVA, T.I.; BYCHKOVA, V.Ye.

 Dynamic birefringence of low molecular fractions of polystyrol
 dissolved in butanone. Part 2. Zhur.tekh.fiz. 29 no.2:207-
 211 F '59.        (MIRA 12:4)

 1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
    (Styrene--Optical properties)

FRISMAN, M.V.; TSVETKOV, V.N.

Dynamic birefringence due to the shape of macromolecules in
solution at different concentrations and shear stresses.  Part 3.
Zhur.tekh.fiz.  29  no.2:212-223  F '59.          (MIRA 12:4)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
            (Styrene--Optical properties)

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S/190/60/002/007/003/017
B020/B052

15.8116

AUTHORS:    Tsvetkov, V. N., Frisman, E. V., Boytsova, N. N.

TITLE:    Optical Anisotropy and Shape of Siloxane Polymer Molecules
in Solution

PERIODICAL:    Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7,
pp. 1001-1009

TEXT:  Here, the flow birefringence method is applied for the investigation
of polydimethyl siloxane (PDMS) and polydimethyl-phenyl siloxane (PDMPS)
solutions. The samples investigated were fractions of the commercial poly-
mers PDMS and PDMPS; the latter, however, contained 10% monomer chain
links with a benzene ring as substituent of the methyl group. The molecular
weights of the fractions investigated were determined by the light scat-
tering method (Refs. 2,3) and, in the case of PDMS, also from the in-
trinsic viscosity in toluene by the equation

$$[\eta] = 4.2 \cdot 10^{-4} M^{0.59} \quad (1) \quad (\text{Ref. 2}).$$ Gasoline was used as solvent in the
determination of the anisotropy of the molecular segment on the basis of

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birefringence. The birefringence of the PDMS fractions in toluene were measured for the investigation of the effect of shape. The absolute viscosity $\eta$ and intrinsic values $[\eta]$ of all solutions were determined besides their optical characteristics. Fraction II ($M=1.79 \times 10^6$) and an unfractionated PDMS sample with an average molecular weight of $7.10^5$ in gasoline, were examined. In all the cases, the dynamic birefringence $\Delta n$ increased proportionally to the velocity gradient $g$ (Fig. 1). The concentration dependence of the quantity $(\Delta n/gc\eta_0)_{q \to 0}$ (with $\eta_0$ denoting the viscosity of the solvent) is given in Fig. 2. The characteristic values of birefringence $[n] = \lim_{\substack{c \to 0 \\ q \to 0}} (\Delta n/gc\eta_0)$ obtained by extrapolation of the straight line of Fig. 2, are given in Table 2. Three fractions of PDMPS (III, V, and VII) in gasoline were investigated. The birefringence of all solutions was negative and very low. For the determination of the characteristic values $[n]$ and $[n]/[\eta]$ therefore the Peterlin method (Tables 1 and 2) was also applied besides the graphical solution of the equation $(\Delta n/gc\eta_0) = f(c)$ (Fig. 3) for fractions V and VII (where the

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extrapolation of $c \rightarrow 0$ seems less promising). Table 3 gives the characteristic data of PDMS in toluene. The dependence of

$$[n] / [\eta] \cdot (45 n_g kT)/(4 \pi (n_g^2 + 2)^2) \text{ on } M/[\eta] \text{ and}$$

$$[n]_f \left\{ \left[ (n_k^2 - n_s^3)/n_s^2 \right] \left[ 1/120 \pi p^2 RT \right] \right\}$$ of the molecular weight of polydimethyl
siloxane in toluene are given in Figs. 4 and 5. Fig. 6 shows the transchain of polydimethyl siloxane, and Fig. 7 the monomer link of methylphenyl siloxane. On the basis of the data obtained one may say that the
quantity of the effect of shape is proportional to the molecular weight
of the fraction. The determined asymmetry of the coiled PDMS is somewhat
lower than the values ьusually obtained for Gauss chains. The segmental
anisotropy of PDMS in gasoline is $4.7 \cdot 10^{-25}$ cm$^3$, and that of PDMPS is

$2.3 \cdot 10^{-25}$ cm$^3$. Thence the anisotropy of the monomer link was calculated:

$0.96 \cdot 10^{-25}$ cm$^3$, and $13.4 \cdot 10^{-25}$ cm$^3$, respectively. From these data the difference in the anisotropy of the compounds SiC and SiO can be calculated

as being $1.1 \cdot 10^{-25}$ cm$^3$. On the basis of the data obtained for PDMPS one

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may say that practically no slowing down of the phenyl side-group (in the
sense of a favored orientation of its faces) occurs during its rotation
round the valence bond $C_{aromat.} - C_{aliphat.}$. The authors thank I. K.
Stavitskiy and V. M. Svetozarova for having supplied the polymer samples.
There are 7 figures, 3 tables, and 19 references: 13 Soviet, 3 US,
2 German, and 1 Swiss.

ASSOCIATION:  Fizicheskiy institut Leningradskogo gosudarstvennogo univer-
              siteta (Physics Institute of the Leningrad State University)

SUBMITTED:    March 4, 1960

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TSVETKOV, V.N.; FRISMAN, E.V.; BOYTSOVA, N.N.

Optical anisotropy and the configuration of siloxane polymer
molecules in solution. Vysokom.soed. 2  no.7:1001-1009  Jl
'60.                                          (MIRA 13:8)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.
   (Siloxanes)                        (Polymers)

FRIDMAN, E.V.; MARTSINOVSKIY, A.M.; DOMNICHEVA, N.A.

Optical anisotropy of macromolecules of polystyrene
derivatives. Vysokom. soed. 2 no.8:1148-1153 Ag '60.
(MIRA 13:9)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo
universiteta.
(Styrene)

FRISMAN, E.V.; SYUY MAO [Hsü Mao]

Temperature dependence of the flow birefringence of polymer solutions in an "ideal" solvent. Vysokom. soed,3 no.2:276-284 F '61.
(MIRA 14:5)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.
(Polymers)  (Refraction, Double)

FRISMAN, E.V.; SYUY MAO [Hsü Mao]

Flow birefringence and viscosity in the system polyisobutylene-benzene in the vicinity of the critical solution temperature. Vysokom. soed, 3 no.2:285-289 F '61.                                    (MIRA 14:5)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.
          (Refraction, Double)    (Propene)  (Benzene)

FRISMAN, E.V.; SIBILEVA, M.A.

Intrinsic anisotropy of macromolecules as a function of the molecular weight of the polymer. Vysokom.soed. 3 no.8:1284-1285 Ag '61.

(MIRA 14:9)

(Macromolecular compounds) (Anisotropy)

FRISMAN, E.V.; YANOVSKAYA, N.K.; SHCHAGINA, L.V.; VOROB'YEVA, V.I.;
        AKSENOVA, N.N.

   Dynamic double refraction of the solution of high-molecular ribo-
   nucleic acid. TSitologiia  4 no.3:323-325 My-Je '62.
                                                        (MIRA 16:3)
   1. Laboratoriya fiziki polimerov Fizicheskogo instituta Leningrad-
   skogo universiteta i Laboratoriya tsitologii zlokachestvennogo
   rosta Instituta tsitologii AN SSSR, Leningrad.
        (NUCLEIC ACIDS)    (REFRACTION, DOUBLE)

BIRSHTEYN, T.M.; BUDTOV, V.P.; FRISMAN, E.V.; YANOVSKAYA, N.K.

Effect of the polymer composition on the optical anisotropy
of its molecules. Vysokom.soed. 4 no.3:455-462 Mr '62.
(MIRA 15:3)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo
universiteta i Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Macromolecular compounds—Optical properties)

FRISMAN, E.V.; YANOVSKAYA, N.K.; BUDTOV, V.P.

Effect of shape in the system polymethylmethacrylate - ethyl acetate. Vysokom.soed. 4 no.4:560-565 Ap '62.     (MIRA 15:5)

1. Fizicheskiy institut, Leningradskiy gosudarstvennyy universitet.
        (Methacrylic acid)                (Ethyl acetate)

37445

S/190/62/004/005/022/026
B110/B108

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AUTHORS:     Frisman, E. V., Vorob'yev, V. I., Shchagina, L. V., Yanovskaya, N. K.

TITLE:       Flow birefringence in solutions of desoxyribonucleic acid.
             I. Optical anisotropy in molecules of native and aggregated
             denaturated desoxyribonucleic acid

PERIODICAL:  Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962,
             762 - 768

TEXT:  The denaturation of desoxyribonucleic acid (DNA) was studied with the
aid of flow birefringence. The sodium salt of DNA from the thyroid gland of
calf (12.63% N, 7.37% P; N/P = 1.71; E(p) = 6500) was investigated in an
optical device with a penumbral compensator (0.0232 λ). Δn and α were
determined as functions of the velocity gradient $g$ of the DNA solutions.
The relation $(\Delta n / gc\eta_0)_{q \to 0} = f(c)$ shows that in solutions of native and $[\eta]$
aggregated denaturated (100°C) DNA, [n] changes by a factor of 115, and
by a factor of 16. The optical anisotropy of the DNA macromolecule is

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given by $(\Delta n \cdot 27 n_s kT)/[6\eta_0(\eta_r-1)4\pi(n_s^2+2)^2] = \Theta_j + \Theta_f^*$, where $n_s$ is the refractive index of the solvent, $\Theta_f^*$ is the shape anisotropy at a given concentration of the solution, $\eta_r$ is the relative viscosity of the solution, and $\eta_0$ is the viscosity of the solvent. The anisotropies of the monomer links with adenine thymine and guanine cytosine were calculated according to J. D. Watson and F. H. C. Crick, and found to be $a_\text{ll} - a_\perp = -15 \cdot 10^{-24}$ cm$^3$. This value points to a considerable rigidity of the DNA molecule. For initial DNA solutions, kept at room temperature and 80, 90, and 100°C, the following values, respectively, were obtained from the equation $\Theta_i = \gamma_1 - \gamma_2$ $= (3/5)(\alpha_1 - \alpha_2)$: $\Theta_i \cdot 10^{20}$ cm$^3$ = -0.90, -0.87, -0.60, -0.12; $(\alpha_1 - \alpha_2) \cdot 10^{20}$ cm$^3$ = -1.5, -1.5, -1.0, -0.2; S = 1000, 900, 700, 130; $A_m$ = 3400, 3060, 2400, 440 Å; $S = (\alpha_1 - \alpha_2)/(a_\text{ll} - a_\perp)$, $A_m = Sb$; b = 3.4 Å (length of monomer). A molecular weight of $5 \cdot 10^6$ and a mean radius of inertia of $\sqrt{R^2} = 2 \cdot 10^3$ Å were obtained from the angular distribution of the intensity of light

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scattered by native DNA solutions.  On the basis of the mean square distance $\overline{h^2}$ between the chain ends, the convolution in the native DNA molecule was found to be $Q = L/\sqrt{\overline{h^2}} \approx 5$. As the lengths of the segments, determined optically and geometrically, differ considerably, further investigations are necessary. There are 3 figures and 1 table.  The most important English-language reference is: J. D. Watson, F. H. C. Crick, Nature, 171, 964, 1953.

ASSOCIATION:  Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta (Physics Institute of the Leningrad State University); Institut tsitologii AN SSSR (Institute of Cytology AS USSR)

SUBMITTED:    July 6, 1961

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FRISMAN, E.V.; SYUY MAO [Hsü Mao]

Optical properties of polymer solutions near the demixing point.
Ukr. fiz. zhur. 7 no.8:915-919 S '62.                    (MIRA 16:1)

1. Fizicheskiy institut Leningradskogo universiteta.
                    (Polymers--Optical properties)
                    (Systems (Chemistry))

FRISMAN, E.V.; SYUY MAO [Hsü Mao]

    Anomalous orientation of flow birefringence. Vysokom.soed. 6 no.2:193-
    196 F '64.                                 (MIRA 17:2)

    1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.

FRISMAN, E.V.; DYUZHEV, G.A.; DADIVANYAN, A.K.

Optical anisotropy of polyvinyl acetate molecules. Part 3. Vysokom.soed.
6 no.2:341-345  F  '64.                                    (MIRA 17:2)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.

FRISMAN, L.V.; DADIVANYAN, A.K.; DYUZHEV, G.A.; KACHEV, Yu.G.

Dependence of the optical anisotropy of macromolecules on the properties of the solvent. Ukr. fiz. zhur. 9 no.5:521-526 My '64.                                                      (MIRA 17:9)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.

FRIDMAN, E.V.; SHCHAGINA, L.V.; VOROB'YEV, V.I.

Glass rotatory viscosimeter. Koll. zhur. 27 no.1:130-134  Ja-F
'65.                                                        (MIRA 18:3)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo
universiteta.

FRISMAN, E.V.; SIBILEVA, M.A.

Optical properties of macromolecules of low degrees of poly-
merization. Vysokom. soed. 7 no.4:674-679  Ap '65.

(MIRA 18:6)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo uni-
versiteta.

FRISHMAN, M.A., doktor tekhn. nauk, prof.; BELYKH, K.D., inzh.; VOLOSHKO, Yu.D., kand. tekhn. nauk; LEVANKOV, I.S.

Investigating special railroads in metallurgical plants operating under heavy loads. Stal' 23 [i.e. 24] no.4:382-383 Ap '64.                                                           (MIRA 17:8)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.

FRISHMAN, M.N., kand. med. nauk

[Clinical aspects and treatment of nephritis in children;
lectures for a course in pediatrics given to students of
the pediatric faculty] Klinika i lechenie nefritov u de-
tei; lektsii dlia studentov pediatricheskogo fakul'teta po
kursu fakul'tetskoi pediatrii.  L'vov, L'vovskii gos. med.
in-t, 1964.  54 p.                    (MIRA 18:2)

FRISHMAN, Moisey Abramovich; KHOKHLOV, Ivan Nikolayevich;
        YAKOVLEVA, Tat'yana Gerasimovna; SERGEYEVA, A.I., red.

    [Railroad roadbed] Zemlianoe polotno zheleznykh dorog.
    Moskva, Transport, 1964.   295 p.       (MIRA 18:2)

SZEKELY, Andras, dr., egyetemi adjunktus; BULLA, Bela, dr., egyetemi tanar;
    MAJOR, Jeno, dr.; KOCH, Ferenc, dr., egyetemi tanar;
    TOTH, Aurel, kozepiskolai tanar; KAZAR, Leona, tanszekvezeto
    tanar; DUDAR, Tibor; RADO, Sandor, egyetemi tanar, a
    foldrajztudomanyok doktora; DEZSENYI, Janos, dr.; KARLOCAI, Janos, dr.;
    LANG, Sandor, dr., egyetemi docens, a foldrajztudomanyok kandidatusa
    (Szeged); KORPAS, Emil, dr., egyetemi docens, a foldrajztudomanyok
    kandidatusa (Szeged); PENZES, Istvan, dr. (Szeged); KOLTA, Janos, dr.;
    SZABO, Pal Zoltan, dr., foldrajzi tudomanyok kandidatusa;
    PINCZES, Zoltan, dr.; KADAR, Laszlo, dr.; FRISNYAK, Sandor;
    PEJA, Gyozo, dr., foldrajztudomanyok kandidatusa

Reports on the work of the Divisions and country sections at
the 82d general assembly of the Hungarian Geographical Society.
Foldr kozl 8 no.3:323-336 '60.

1. Magyar Foldrajzi Tarsasag valasztmanyi tagja (for Szekely,
Toth, Kazar, Karlocai, Lang, Korpas, Kolta, Szabo, Pinczes,
Peja). 2. Magyar Foldrajzi Tarsasag tarselnoke (for Bulla,
Koch and Rado). 3. "Foldrajzi Kozlemenyek" szerkeszto
bizottsagi tagja (for Koch and Rado). 4. Magyar Tudomanyos
Akademia levelezo tagja (for Bulla). 5. Magyar Foldrajzi
Tarsasag Termeszeti Foldrajzi Szakosztaly elnoke (for Bulla).
                    (Continued on next card)

SZEKELY, Andras——(continued)  Card 2.

6. Magyar Foldrajzi Tarsasag Termeszeti Foldrajzi Szakosztaly titkara (for Szekely). 7. Magyar Foldrajzi Tarsasag Gazdasagi Foldrajzi Szakosztaly elnoke (for Koch). 8. Magyar Foldrajzi Tarsasag Gazdasagi Foldrajzi Szakosztaly titkara (for Major). 9. Magyar Foldrajzi Tarsasag Oktatasmodszertani Szakosztaly elnoke, es Kozponti Pedagogus Tovabbkepzo Intezet (for Major). 10. Magyar Foldrajzi Tarsasag Oktatasmodszertani Szakosztaly titkara, es szakfelugyelo (for Toth). 11. Magyar Foldrajzi Tarsasag Terkepeszeti Szakosztaly elnoke (for Rado). 12. Magyar Foldrajzi Tarsasag Terkepeszeti Szakosztaly elnoke (for Rado). 13. Magyar Foldrajzi Tarsasag Termeszetjaro Csoport (for Dezsenyi and Karlocai). 14. Vallalati jogtanacsos (for Karlocai). 15. Magyar Foldrajzi Tarsasag Szegedi Osztalya elnoke (for Lang and Korpas). 16. Magyar Foldrajzi Tarsasag Szegedi Osztalya titkara (for Penzes). 17. Magyar Foldrajzi Tarsasag Del-Dunantuli Osztalya elnoke, es tudomanyos intezeti igazgato, Pecs (for Szabo). 18. Magyar Foldrajzi Tarsasag Del-Dunantuli Osztalya titkara, es tudomanyos munkatars, Pecs (for Kolta).

(Continued on next card)

SZEKELY, Andras--(continued)  Card 3.

19. Magyar Foldrajzi Tarsasag Tiszantuli Osztalya
elnoke (for Kadar). 20. Magyar Foldrajzi Tarsasag
Tiszantuli Osztalya titkara (for Pinczes).
21. Magyar Foldrajzi Tarsasag Miskolci Osztalya
Elnoke, es Kossuth-dijas gimnaziumi igazgato (for Peja).
22. Magyar Foldrajzi Tarsasag Miskolci Osztalya
titkara (for Frisnyak).

FRISNYAK, Sandor

Report on the work of the Miskolc Section, Hungarian
Geographical Society performed during the second half
of 1959. Foldr kozl 8 no.1:111-112 '60.

1. Magyar Foldrajzi Tarsasag Miskolci Osztalyanak titkara.

FRISNYAK, Sandor

Geography of the Hernad Valley.  Borsod szemle 5 no. 2:170-179
'61.

1.  "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor

General karst genetic, morphologic and hydrographic studies on
the Aggtelck karst by Dr. Laszlo Jakucs.  Borsod szemle 6 no.2:
79-80  '62.

1. "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor, tudomanyos munkatars

    Istvan Nogel's journey to the Orient.  Borsod szemle 6 no. 4:
36-38  '62.

    1. "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor

Hydrographic data on Miskolc and Southern Borsod. Borsod szemle
6 no.5:28-31 '62.

1. Tudomanyos Ismeretterjeszto Tarsulat termeszettudomanyi
szaktitkara; "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor

    Life of Karoly Ballagi and his work in geography.  Borsod szemle 6
no.6:38-40 '62.

    1.  Tudomanyos Ismeretterjeszto Tarsulat Borsod megyei termeszettudomanyi
szaktitkara; "Borsodi szerkeszteje.

FRISNYAK, Sandor

A new astronomical observatory and sputnik observation station.
Borsod szemle 6 no.6:86 '62.

1. Tudomanyos Ismeretterjeszto Tarsulat Borsod megyei termeszettudomanyi
szaktitkara; "Borsodi Szemle" szerkesztoje.

PEJA, Gyozo, dr., a foldrajzi tudomanyok kandidatusa (Miskolc);
FRISNYAK, Sandor

Report on the work of the Miskolc Section.  Foldr kozl
10 no.3:307-308  '62.

1. Kossuth-dijas gimnaziumi igazgato; Magyar Foldrajzi
Tarsasag Miskolci Osztalya elnoke (for Peja). 2. Szakszerkeszto;
Magyar Foldrajzi Tarsasag Miskolci Osztalya titkara (for
Fisnyak).

FRISNYAK, Sandor

The first printed map of Borsod County.   Borsod Szemle 7 no.1:56-57
'63.

1. Tudomanyos Ismeretterjeszto Tarsulat Borsod megyei termeszettudo-
manyi szaktitkara; "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor

      Data on the economic geography of Szikszo. Borsod szemle
7 no.3:108-109 '63.

1. Tudomanyos Ismeretterjeszto Tarsulat Borsod megyei termeszet-
tudomanyi szaktitkara; "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor

Dikili Tas.  Borsod szemle 7 no.4:84-86  '63.

1.  "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor
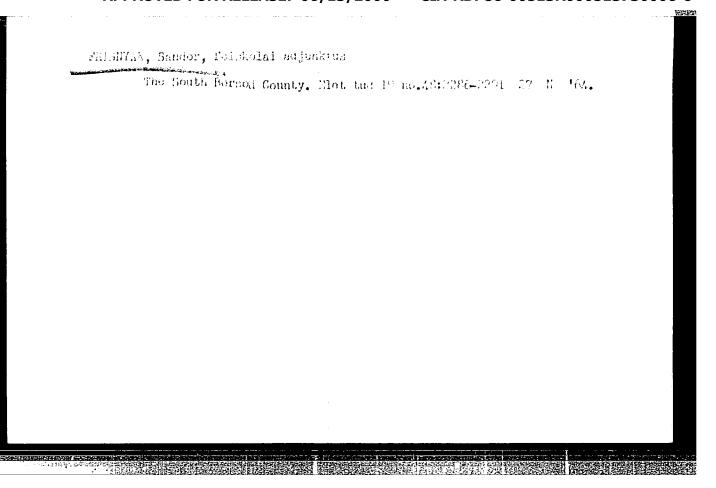
Conference for lecturers in economic history in Miskolc.
Borsod szemle 7 no.6:111 '63.

1. "Borsodi Szemle" szerkesztoje.

FRISNYAK, Sandor, foiskolai adjunktus

Greater Miskolc. Pt.2. Elet tud 19 no.35:1654-1659
28 Ag '64.

FRISNYAK, Sandor, foiskolai adjunktus

Greater Miskolc, Pt.1.   Elet tud 19 no.34:1606-1612 21 Ag '64.

FABSITAN, Sandor, Foiskolai adjunktus

The South Borsod County. Plot tud 19 no.43:2286-2291 27 N '64.

FRISNYAK, Sandor

the Bodva Valley.  Elet tud 20 no.17:790-795  30 Ap '65.

FRISS, A.

Leonardo da Vinci's spinning jenny. p. 293. Magyar Textiltechnika. Budapest.
No. 8, Aug. 1955.

Source: East European Accessions List, (EEAL), Lc, Vol. r, No. 2, Feb. 1956

FRISS, Antal; FULOP, Istvan

> Modern production technology of cotton type polyamide yarns.
> Magy textil 17 no.1:19-25  Ja '65.
>
> 1. Light Industry Designing Office, Budapest.

FRISS, I.

'H

TOBBTERMELES — INDUSTRIAL ORGANIZATION
Vol. IV. — 1950
No. 8-9, Aug. - Sept.

35

TÖBBTERMELÉS --
INDUSTRIAL ORGANIZATION
Vol IV 1950
No. 8-9, Aug. Sept.

I. Friss                                      Jul 21
Wages in our society during the build
ing of socialism                             pp   1   10

A S M S L A   METALLURGICAL LITERATURE CLASSIFICATION

FRISS, Istvan, akademikus (Budapest)

Application of economic laws by the government in agriculture. Magy
tud 67 no.8:445-454 Ag '60.
(Hungary--Agriculture)                                      (EEAI 9:11)

FRISS, Istvan, akademikus

On the second five-year plan. Magy tud 68 no.12:717-728 D '61.

1. Intezeti igazgato, Magyar Tudomanyos Akademia Kozgazdasag-
tudomanyi-Intezete, Budapest.

FRISHSH, Ishtvan [Friss, Istvan], akademik; KHGEDYUSH, Andrash
[Hegedus, Andras]; OZHVAL'D, Laslo[Ozsvald, Laszlo], kand.
ekonom. nauk, nauchnyy sotr.; KOMLO, Laslo [Komlo, Laszlo],
nauchnyy sotr.; REDEI, Aranka, kand. ekonom. nauk, nauchnyy
sotr.; ALEKSA, M.[Aleksza, M.], red. izd-va; FARKASH, I.
[Farkas, I.], tekhn. red.

[Material incentives in the national economy of Hungary]
Material'noe stimulirovanie v narodnom khoziaistve Vengrii;
sbornik statei.   Budapest, 1962.  99 p.        (MIRA 15:7)

1. Akademiai Kiado, Budapest. 2. Direktor Instituta ekonomiki
Vengerskoy akademii nauk (for Frishsh). 3. Zamestitel' predse-
datelya TSentral'nogo Statisticheskogo upravleniya Vengrii (for
Khgedyush). 4. Institut ekonomiki  Akademii nauk Vengrii (for
Ozhval'd, Komlo, Redei).
         (Hungary--Incentives in industry)

FRISS, ISTVAN

**HUNGARY**

FRISNYAK, Sandor; SZAKACZKI, Istvan, tanar  (Szikszo)

Geography of Szikszo.  Borsod szemle 7 no.4:36-44  '63.

1. "Borsodi Szemle" szerkesztoje (for-Frisnyak).

STYK, B.; technical assistance: LESKOVA, B.; FRISTACKA, Z.

Cofactor and specific antibodies against influenza viruses. I. Method of cofactor titration. Cofactor content of various animal sera. Acta virol.Engl.Ed.Praha 5 no.6:334-341  N '61.

1. Institute of Virology, Czechoslovak Academy of Sciences, Bratislava.

(INFLUENZA immunol)    (HEMAGGLUTINATION)

FRISTACKY, N.

A simple four-terminal network producing nonlinear characteristics.

P. 472. (STRO-NOLLEKTROTECHNICKY, CASOPIS.) (Bratislava, Czechoslovakia) Vol. 8, No. 6, 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

FRISTACKY, N.

Additional systems in control circuits with magnetic amplifiers. p. 136.

ELEKTROTECHNICKY CASOPIS. Bratislava, Czechoslovakia, Vol. 10, No. 2, 1959

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 10, Oct. 1959.
Uncl.

*16.6800*

44631

Z/042/62/000/010/001/004
E140/E435

AUTHOR:      Frištacký, Norbert, Engineer

TITLE:       A contribution to the analysis and design of one type
             of magnetic logic element

PERIODICAL:  Elektrotechnický časopis, no.10, 1962, 577-593

TEXT:    The article follows closely work on magnetic logical
element realising the implication function (N.P.Vasilieva,
J.Haškovec, Avtomatika i telemechanika, v 23, no.1, 1962, 57)
and develops in greater detail the structures that are possible
by using this element and the calculations necessary for its
optimal design.   Essentially the element realises operations of
the form     $v^{n+1} = (\overline{x} + y)^n$   where the indices indicate clock
times.   The simplest circuit is shown in Fig.1, realising the
function given in Table 1.   The circuits are analysed for the
various possible combinations of input signals to determine their
operating conditions, the logical gain (load factor), optimal
turns ratios and the design of the magnetic circuit for a given
logical gain, and the power consumption.   Curves are given for

Card 1/2   * S/103/62/022/001/006/014

FRISTAS, O.

"Physiological Basis of Massaging Dairy Cattle."  p. 55.  (ZA SOCIALISTICKE ZEMEDELSTVI,
Vol. 4, no. 1, Jan. 1954, Praha, Czechoslovakia)

So:  Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954, Unclassified

FRISTOV, Vladimir Grigor'yevich; DEBERDEYEV, B.S., red.; GALAKTIONOVA,
Ye.N., tekhn. red.

[New method for testing the stabilization of earth roadbeds]
Novyi metod kontrolia uplotneniia zemlianogo polotna. Moskva,
Avtotransizdat, 1962.  28 p.                    (MIRA 15:8)
        (Soil stabilization--Testing)
        (Radioisotopes--Industrial applications)

FRISZ, S., TIMORIEWZ, A.

Kurs fizyki, Panstwowe Wydawnictwo Naukowe, t.I, 1954, s. 491.
A Course In Physics
SO:  Technologia Ropy, 1955, Wroclaw, Uncalssified.

55M/6
735.64
.T6

FRISZMAN, M: ISAKOW, I: WOLOSZKO, D.

Track calculation for concrete ties prestressed with wire. Tr. from the Russian. p.53

PRZEGLAD KOLEJOWY DORGOWY. (Wydawnictwa Komunikacyjne) Warszawa, Poland Vol.11, no.3, Mar. 1959

Monthly list of East European Accessions (EEAI) LC, Vol.8, no.7, July 1959

Uncl.

FRITIZ-SANDOR, dr.

Life and work of Agoston Schoepf-Merei, 1804-1858.   Orv. hetil.
96 no.13:359-361 27 Mar 55.

    (BIOGRAPHIES,
        Schoepf-Merei, Agoston)

FRITS, J.


Geologic conditions of the territory between Sarazsadany, Tolcsva, and Vamosujfalu.
p. 55.


A MAGYAR ALLAMI FOLDTANI INTEZET EVI JELEMTESE.   Budapest, Hungary, 1955/56 (Published
                                                                                         1959)


Monthly List of East European Accessions (EEAI ) LC, Vol. 9, N o. 2, Feb. 1960
Uncl.

FRITS, J.

Occurrence ef kaolin at Szegilong.   p. 41

A MAGYAR ALLAMI FOLDTAHI INTEZET EVI JELENTESE.   Budapest, Hungary, 1955/56 (Published
                                                                                        1959)

Monthly List of East ᴱuropean ᴬccessiosn (EEAI) LC, Vol. 9, No. 2, Feb. 1960
Uncl.

FRITS, J.

Occurrence of kaolin at Vegardo, p. 47.


A MAGYAR ALLAMI FOLDTANI INTEZET EVI JELENTESE. Budapest, Hungary.


Monthly List of East European Assessions (EEAI) LC, Vol. 9, No. 2, Feb. 1960.
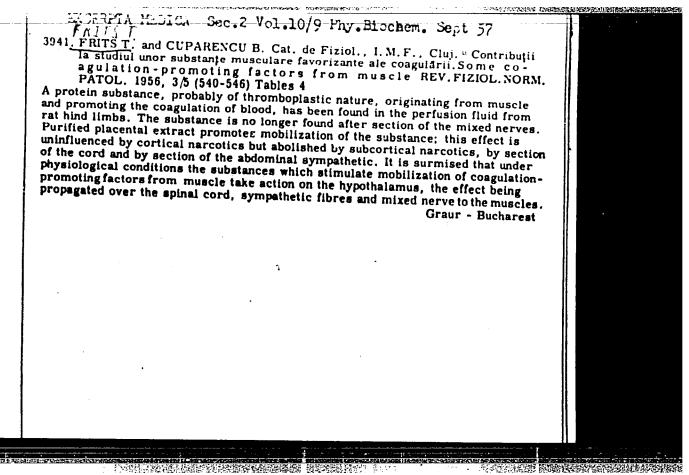Uncl.

FRITS, F.

FRITS, T. ; NEUMANN, E.

New method of gastric fistulization on experimental animals. p. 1643.

Academia Republicii Populare Romine. COMUNICARILE. Bucuresti.  Vol. 5,

no. 11, Nov. 1955.

So. East European Accessions List     Vol. 5, No. 9     September, 1956

3941. FRITS T. and CUPARENCU B. Cat. de Fiziol., I.M.F., Cluj. « Contribuţii la studiul unor substanţe musculare favorizante ale coaguldrii.Some co-agulation-promoting factors from muscle REV.FIZIOL.NORM. PATOL. 1956, 3/5 (540-546) Tables 4

A protein substance, probably of thromboplastic nature, originating from muscle and promoting the coagulation of blood, has been found in the perfusion fluid from rat hind limbs. The substance is no longer found after section of the mixed nerves. Purified placental extract promotes mobilization of the substance; this effect is uninfluenced by cortical narcotics but abolished by subcortical narcotics, by section of the cord and by section of the abdominal sympathetic. It is surmised that under physiological conditions the substances which stimulate mobilization of coagulation-promoting factors from muscle take action on the hypothalamus, the effect being propagated over the spinal cord, sympathetic fibres and mixed nerve to the muscles.

Graur - Bucharest

Country : USSR                                                    T
Category: Human and Animal Physiology. Neuromuscular
          Physiology

Abs Jour: RZhBiol., No 19, 1958, 89141

Author  : Frits, T.; Donovan, G.
Inst    : Rumanian Academy
Title   : The Effect of the Nervous Impulse on Amino-acidemia
          of a Perfused Muscle

Orig Pub: Studii si cercetari fiziol. Acad. RPR, 1956, 1, No 3-4,
          463-464.

Abstract: No abstract.

Card    : 1/1

RUMANIA/Human and Animal Physiology (Normal and Pathological)    T-2
                    Metabolism. Nitrogen Metabolism.

Abs Jour   : Ref Zhur - Biol., No 16, 1958, 74458

Author     : Frits, T., Donovan, G.
Inst       :
Title      : Influence of the Nervous System on Nitrogen Metabolism in
             Muscles.

Orig Pub   : Studii si cercetari fiziol. Acad. RPR, 1957, 2, No 3-4,
             463-469.

Abstract   : An isolated (humoral) gastrocnemius muscle of a dog with
             a sectioned or intact sciatic nerve was subjected to a
             physical stress for one hour (a raised burden of determined
             weight).  In the perfusion liquid, the content of amino
             acid (AA) was determined at the start of the stress period
             and then each hour for 6 hours.  With preservation of the
             whole nerve, the content of AA in the perfusate was per-
             manent.  Neurotomy of the sciatic nerve led to an increase

Card 1/2

RUMANIA/Human and Animal Physiology (Normal and Pathological).     T-13
          Climate.

Abs Jour   :  Ref Zhur - Biol., No 16, 1958, 75314

Author     :  Cupcea, S., Deleanu, M., Frits, T., Gros. E.
Inst       :  -
Title      :  Effect of Ionized Air on Adrenalectomized Animals.
              1. Duration of Survival Period of Rats.

Orig Pub   :  Comm. Acad. RPR, 1957, 7, No 1, 143-149


Abstract   :  No abstract.




Card 1/1

ROMANIA

PETRU, T., MD; STRAULD, H., Lecturer; BLUM, E., MD; DIRNAU, B. MD.

Institute of Hygiene and Public Health, Cluj Branch. (Institutul de Igiena si sanatate publica, Filiala Cluj.) - (for all)

Bucuresti, Igiena, Vol XII, No 1, Jan-Feb 63, pp 35-37.

"The Action of Cholesterol and Positive Aeroions on Spontaneous Motility."
(Paper read in the Section of Hygiene of the U.S.S.N.M. in Cluj, at the meeting of January 11, 1962.)

(4)

*FRITSBERG, V.*

FRITSBERG, V.[Fricbergs, V.]

Physical nature of the polarization process in solid solutions of
strontium titanate and bismuth titanate. Vestis Latv ak no.5:39-51
'61.

FREYDENFEL'D, E.Zh.; APSITIS, A.A.; FRITSBERG, V.Ya.

Studying the crystal phases and some dielectric properties of
components of the system CaO - BaO - TiO$_2$. Izv. vys. ucheb. zav.;
fiz. no.4:68-71 '59.                              (MIRA 13:3)

1.Latviyskiy gosuniversitet im. P. Stuchki i Rizhskiy politekhnicheskiy
institut.
          (Titanium oxide)  (Barium oxide)  (Calcium oxide)

85886

*24,7500 (1043,1160)*
*24,7800 (1144,1162)*

S/048/60/024/011/022/036
B006/B060

AUTHORS:        Fritsberg, V. Ya., Freydenfel'd, E. Zh., and Kruchan, Ya. Ya.

TITLE:        Dielectric Properties and Structure of Solid Solutions of the $PbTiO_3$ - $SrTiO_3$ - "$Bi_{2/3}TiO_3$" System

PERIODICAL:    Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
               Vol. 24, No. 11, pp. 1387-1390

TEXT:  This is the reproduction of a lecture delivered at the Third
Conference on Ferroelectricity which took place in Moscow from January
25 to 30, 1960. The authors studied the transition of the $PbTiO_3$ -
$SrTiO_3$ - "$Bi_{2/3}TiO_3$" system from the typical seignettoelectric state into
a state with relaxation polarization. The initial materials used for the
preparation of the ceramic specimens were $PbO$, $Bi_2O_3$, $TiO_2$, and $SrCO_3$. The
analyses of the specimens were accurate within 1.5% by weight. $\varepsilon$ and $\tan\delta$
were measured by the usual methods in a wide frequency and temperature

Card 1/4

85886

Dielectric Properties and Structure of Solid
Solutions of the PbTiO$_3$ - SrTiO$_3$ - "Bi$_{2/3}$TiO$_3$"
System

S/048/60/024/011/022/036
B006/B060

range, the seignettoelectric properties were studied at 50 cps, the X-ray
analyses were made with an X-ray diffractometer of the type YPC-50И
(URS-50I). The determination of the lattice parameters by the counting
technique was accurate within ±0.002 kX. Two sections were examined in the
ternary system (Fig. 1), wherein the ratios of SrTiO$_3$ and PbTiO$_3$ were
constantly equal to 7:3 (A) and 4:6 (B), while the "Bi$_{2/3}$TiO$_3$"
concentration varied from one compound to another. It was established by
X-ray analysis that there actually is a range of solid solutions in the
system and that the compounds of section A have a pseudocubic structure
under only slight additions, while those relative to B are tetragonal
(at room temperature). The lattice parameters of different compositions
are given. Fig. 2 shows $\varepsilon(t)$ and Fig. 3 shows $\varepsilon$ and tan$\delta$ as functions of
temperature t for compounds of section A and section B for different
"Bi$_{2/3}$TiO$_3$" additions of 1 - 3 and 0 - 40 mol%. The following rules were
established: 1) An increase of the "Bi$_{2/3}$TiO$_3$" content on a variation of

Card 2/4

85886

Dielectric Properties and Structure of Solid      S/048/60/024/011/022/036
Solutions of the $PbTiO_3$ - $SrTiO_3$ - "$Bi_{2/3}TiO_3$"   B006/B060
System

the ratio of $PbTiO_3$ and $SrTiO_3$ gives rise to an increase of the lattice
tetragonality, while the phase transition shifts toward higher
temperatures. 2) If there is more $PbTiO_3$ than $SrTiO_3$, the seignettoelectric
character of the initial substance is basically conserved under an increase
of the "$Bi_{2/3}TiO_3$" addition. 3) If, on the contrary, $SrTiO_3$ prevails, the
introduction of the addition will give rise both to a shift of the phase
transition to higher temperatures and to an enlargement of the phase
transition region; at the same time, a relaxation can be observed in the
dielectric polarization. The increase of lattice tetragonality on the
introduction of the addition can be explained by the high polarizability
of the bismuth ion. The authors finally thank G. A. Smolenskiy for having
proposed the subject and for his supervision, as well as I. Ye. Myl'nikova
for advice given in regard of the preparation of specimens. There are 3
figures and 6 references: 5 Soviet and 1 Japanese.

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85886

Dielectric Properties and Structure of Solid      S/048/60/024/011/022/036
Solutions of the PbTiO$_3$ - SrTiO$_3$ - "Bi$_{2/3}$TiO$_3$"     B006/B060
System

ASSOCIATION:  Latviyskiy gos. universitet im. Petra Stuchki (Latvian
              State University imeni Petr Stuchki). Rizhskiy
              politekhnicheskiy institut (Riga Polytechnic Institute)

Card 4/4

15 2650

34,7500 (1160)

AUTHORS:     Freydenfel'd, E. Zh., Fritsberg, V. Ya., Kruchan, Ya. Ya.

TITLE:       Effect of addition of $SiO_2$ on the properties of polycrystalline

             $BaTiO_3$

TEXT:   Addition of $SiO_2$ to $BaTiO_3$ (I) causes a decrease of the parameters
and the tetragonality of the elementary cell, irrespective of the method
of addition. This is obviously related to the formation of a solid solu-
tion of the substitution type. Of the new phases, the compound $BaTiSiO_5$
is formed first of all. Addition of $SiO_2$ shifts the Curie point of I by

$25 - 30^\circ C$ toward high temperatures, which also confirms the formation of a
solid solution. Addition of $SiO_2$ lowers the dielectric constant and

changes the parameters of the dielectric hysteresis loop. The residual
Card 1/2

28303

S/081/61/000/016/006/040
B118/B101

Effect of addition of $SiO_2$ ...

polarization is reduced while the coercive force is increased.  If small
amounts are added, the spontaneous polarization tends to increase,
whereas it tends to decrease at high concentrations.  [Abstracter's note:
Complete translation.]

Card 2/2

S/058/63/000/002/042/070
A062/A101

AUTHORS:        Freydenfeld, E. Zh., Fritsberg, V. Ya., Kruchan, Ya. Ya.

TITLE:          Dielectric properties and structure of solid solutions in the
                $CaTiO_3$ - $Bi_{2/3}TiO_3$ system

PERIODICAL:     Referativnyy zhurnal, Fizika, no. 2, 1963, 64, abstract 2E420
                ("Uch. zap. Rizhsk. politekhn. in-t", 1962, v. 6, 251 - 255)

TEXT:           The existence of solid solutions was observed in the $CaTiO_3$ - $B_{2/3}TiO_3$
system for a content of $Bi_{2/3}TiO_3$ up to 25 - 30 mol%. In the indicated ceramic sol·
id solutions, the water absorption, the lattice constant, the roentgenographic den-
sity, the microhardness and the dielectric properties were investigated. It is
shown that at room temperature the crystal lattice is cubic, and that the lattice
constant increases with the increase of the content of $Bi_{2/3}TiO_3$. The dielectric
permittivity $\varepsilon$ of the solid solutions increases as the content of the second com-
ponent increases (from 150 to 220), and also as the temperature decreases. No
maximum of $\varepsilon$ and no hysteresis loops were observed down to the temperature of liq-
uid air (the ferroelectric phase transition is possible at lower temperatures).
Card 1/2

Dielectric properties and structure of...

3/058/63/000/002/042/070
A062/A101

Relaxation phenomena were not observed in the frequency range from 200 cps to 200 kc and at temperatures from -170 to +150°C.

V. Petrov

[Abstracter's note: Complete translation]

Card 2/2

S/196/63/000/002/011/026
E194/E155

AUTHORS:     Freydenfel'd, E.Zh., Fritserg, V.Ya., and Kruchan,Ya.Ya.

TITLE:       The dielectric properties and structure of solid
             solutions in the system $CaTiO_3$ - BaTiO

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
             no.2, 1963, 15, abstract 2 B 77. (Zinatn. raksti.
             Rigas politehn. inst., Uch. zap. Rizhsk. politekhn.
             in-ta, v.6, 1962, 251-255)

TEXT:       Solid solutions of the system CaTiO - $Ba_{2/3} TiO_3$   were
investigated to find whether they show seignette-electric phase-
transitions, by analogy with solid solutions of $SrTiO_3 - Bi_{2/3}TiO_3$,
and whether relaxation effects are observed in them.  It is shown
that the region of solid solutions of the systems investigated is
limited to concentrations of 25-30% mole $Bi_{2/3}TiO_3$.  At room
temperature, X-ray structural analysis showed that the compositions
had a cubic lattice in which the lattice constant  a  increased on
increasing the content of $Bi_{2/3}TiO_3$.  The table gives results of a

Card 1/3

The dielectric properties and ...      S/196/63/000/002/011/026
                                       E194/E155

study of the physical-chemical and ceramic properties of solid
solutions of the system studied.  Values of $\varepsilon$ and tan $\delta$ of
solid solutions were studied as functions of temperature in the
range from 73 °K (-200 °C) to 423 °K (+150 °C), in the frequency
range of 100 c/s to 200 kc/s.  On increasing the concentration of
$Bi_{2/3}TiO_3$ an increase in $\varepsilon$ is observed.  However, the
temperature functions of $\varepsilon$ and tan $\delta$ for solid solutions differ
little from those for pure $Ca\ TiO_3$.  To verify the presence of the
seignette-electric phase-transition presupposed by the authors, it
is necessary to continue investigations of the dielectric
properties down to helium temperatures.  The hysteresis loops and
relaxation effects were not observed in the investigated systems
down to the temperature of liquid air.
2 figures. 8 references.

[Abstractor's note:  Complete translation.]

Card 2/3

The dielectric properties and ...    S/196/63/000/002/011/026
E194/E155

Table

| Molar composition, % | | Max.1st firing temp., °C | Max.2nd firing temp., °C | Water absorption, % | Lattice const. kX | X-ray density g/cm³ | Micro-hardness kg/mm³ |
|---|---|---|---|---|---|---|---|
| calculated | analysis | | | | | | |
| 0 | 0 | 1300 | 1400 | 14.00 | 3.822 | 4.02 | - |
| 5 | 5.4 | 1200 | 1400 | 0.24 | 3.819 | 4.20 | 395 |
| 10 | 8.5 | 1200 | 1300 | 0.22 | 3.821 | 4.37 | 412 |
| 20 | 18.16 | 1100 | 1300 | 0.08 | 3.827 | 4.69 | 470 |
| 25 | 22.1 | 1100 | 1300 | 0.91 | 3.831 | 4.84 | 420 |
| 30 | 29.7 | 1100 | 1300 | 0.02 | 3.831 | 5.02 | 583 |
| 35 | 31.0 | 1100 | 1250 | 0.01 | - | - | 609 |

Card 3/3

FRITSBERG, V. Ya., and ROLOV, B. N.

"On Some Features Determining Nature of Ferroelectric Phase Transition."

report presented at the Symposium on Ferroelectricity and Ferromagnetism, Leningrad, 30 May - 5 June 1963.

ACCESSION NR: AP4030637

S/0048/64/028/004/0649/0652

AUTHOR: Fritsberg, V.Ya.; Rolov, B.N.

TITLE: Some factors affecting the character of ferroelectric phase transitions
/Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May
to 5 June 1963/

SOURCE: AN SSSR. Izv.Ser.fiz., v.28, no.4, 1964, 649-652

TOPIC TAGS: ferroelectric solid solution , ferroelectric phase transition, diffuse
phase transition, phase fluctuation theory, correlation energy

ABSTRACT:  A simple statistical thermodynamic treatment is given of the diffuse
phase transition in ferroelectric solid solutions of the oxygen octahedron type.
This treatment is a generalization of an earlier discussion by one of the authors of
lead, strontium and bismuth titanate solutions (V.Ya.Fritsberg, Izv. N LatvSSR,No.5
166,39,1961), and is based on the theory of phase fluctuations. It is assumed that
the crystal can be divided into regions of volume $v_0$, each of which may be either
polarized or depolarized but is never in an intermediate state. Experimental evi-
dence for the existence of such regions is cited (W.Kanzig,Helv.phys.acta,24,175,

Card 1/2

L 57557-65    EWG(j)/EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EPR/EEC(t)/T/EWP(t)/EWP(b)/EWA(c)
Pr-4/Ps-4/Pt-7 , IJP(c)   JD/JW/GG
ACCESSION NR: AP5016145                      UR/0048/65/029/006/1019/1021

AUTHOR: Fritsberg, V.Ya.;Rolov, B.N.

TITLE: Some regularities of smeared out transition in ferroelectric
solid solutions /Report, 4th All-Union Conference on Ferroelectricity
held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR.Izvestiya, Ser.fizicheskaya,v.29,no.6,1965,1019-1021

TOPIC TAGS: ferroelectricity, dielectric constant, heat capacity,
phase transition, solid solution

ABSTRACT:  The authors have previously calculated the temperature de-
pendence of the anomalous heat capacity of a ferroelectric material
near the transition temperature on the basis of the theory of hetero-
phase fluctuations (Izv.AN SSSR.Ser.fiz.28,649,1964). The calculated
half-width of the heat capacity peak of $BaTiO_3$ is 0.72°K; this is in
good agreement with the experimental data of J.Volger (Phillips Res.
Rep.7,21,1952). Because of the paucity of thermal data on ferroelec-
trics this calculation is now extended to give theoretical information

Card 1/3

L 57557-65
ACCESSION NR: AP5016145

concerning the behavior of the dielectric constant near the ferroelectric transition. The calculation is limited to temperatures close to but above the transition temperature, and it is assumed that at the transition temperature half the volume of the ferroelectric material has been depolarized and the polarized material forms microscopic islands in the depolarized phase. The calculation is similar to the previous calculation of the heat capacity. A relation is derived between the heat capacity and the dielectric constant with the aid of which one can approximately calculate the temperature dependence of the heat capacity from the measured temperature dependence of the dielectric constant. It is proposed that the temperature derivative of the dielectric constant at a fixed temperature interval above the transition temperature be employed as a criterion for the degree of smearing out of the phase transitions in ferroelectric solid solutions. A formula is derived that enables one to do this in a "relative qualitative" way. Orig.art.has: 14 formulas.
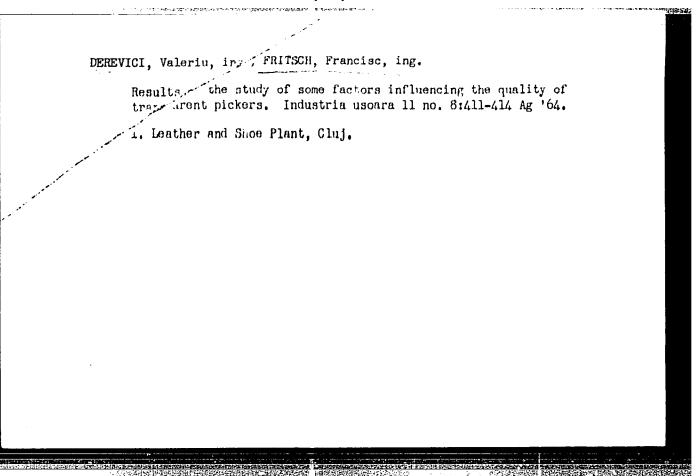
Card 2/3

L 57557-65

ACCESSION NR: AP5016145                                    /

ASSOCIATION: Latviyskiy gosudarstvennyy universitet (Latvian State University)

SUBMITTED: 00                    ENCL: 00            SUB CODE: SS, EM

NR REF SOV: 001                  OTHER: 001

Card 3/3

FRITSCH, A.

Relationships between planned, smooth railroad loadings and shipment
to and from in forestry transportation. p. 353.
(Kozlekedesi Kozlony, Vol. 13, no. 19, May 1957.  Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 9, Sept. 1957. Uncl.

DEREVICI, Valeriu, ing.; FRITSCH, Francisc, ing.

Results, the study of some factors influencing the quality of
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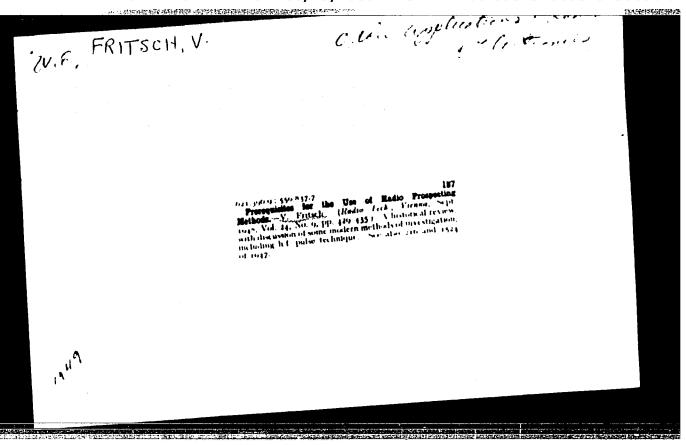MINCO, M.


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